

1. (twice amended) Method for the preparation of a vaccine for immunization of humans and animals against tumor cells comprising the steps of:

- a) isolating autologous tumor cells;
- b) treating the tumor cells to prevent the survival thereof following reinfusion;
- c) incubating the thus treated tumor cells with intact heterologous bispecific antibodies showing the following properties:

α - binding to a T cell;

β - binding to at least one antigen on a tumor cell;

γ - binding, by their Fc portion to Fc receptor-positive cells capable of activating the Fc receptor-positive cell whereby the expression of cytokines, co-stimulatory antigens or both is induced or increased, wherein the bispecific antibodies are members selected from the group consisting of the following isotype combinations:

rat-IgG2b/human-IgG1,

rat-IgG2b/human-IgG2,

rat-IgG2b/human-IgG3[oriental allotype G3m(st) = binding to protein A],

rat-IgG2b/human-IgG4;

rat-IgG2b/rat-IgG2c;

mouse-IgG2a/human-IgG3[caucasian allotypes G3m(b+g) = no binding to protein A, in the following indicated as *]

mouse-IgG2a/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge]-

human-IgG3*-[CH2-CH3]

mouse-IgG2a/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-[CH2-CH3]

- 25 mouse-IgG2a/human-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-
26 [CH2-CH3]
- 27 mouse-[VH-CH1,VL-CL]-human-IgG1/rat-[VH-CH1,VL-CL]-
28 human-IgG1-[hinge]-human-IgG3*-[CH2-CH3]
- 29 mouse-[VH-CH1,VL-CL]-human-IgG4/rat-[VH-CH1,VL-CL]-human-IgG4-
30 [hinge]-human-IgG4[N-terminal region of CH2]-human-IgG3*[C-terminal region
31 of CH2: > aa position 251]-human-IgG3*[CH3]
- 32 rat-IgG2b/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge-CH2-CH3]
- 33 rat-IgG2b/mouse-[VH-CH1,VL-CL]-human-IgG2-[hinge-CH2-CH3]
- 34 rat-IgG2b/mouse-[VH-CH1,VL-CL]-human-IgG3-[hinge-CH2-CH3, oriental
35 allotype]
- 36 rat-IgG2b/mouse-[VH-CH1,VL-CL]-human-IgG4-[hinge-CH2-CH3]
- 37 human-IgG1/human-[VH-CH1,VL-CL]-human-IgG1-[hinge]-
38 human-IgG3*-[CH2-CH3]
- 39 human-IgG1/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG4[N-
40 terminal region of CH2]-human-IgG3*[C-terminal region of CH2 : > aa position
41 251]-human-IgG3*[CH3]
- 42 human-IgG1/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG4[N-
43 terminal region of CH2]-human-IgG3*[C-terminal region of CH2 : > aa position
44 251]-human-IgG3*[CH3]
- 45 human-IgG1/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG2[N-
46 terminal region of CH2]-human-IgG3*[C-terminal region of CH2 : > aa position
47 251]-human-IgG3*[CH3]

- 48 human-IgG1/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG2[N-
49 terminal region of CH2]-human-IgG3*[C-terminal region of CH2 : > aa position
50 251]-human-IgG3*[CH3]
- 51 human-IgG1/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-[CH2-
52 CH3]
- 53 human-IgG1/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-
54 [CH2-CH3]
- 55 human-IgG2/human-[VH-CH1,VL-CL]-human-IgG2-[hinge]-human-IgG3*-
56 [CH2-CH3]
- 57 human-IgG4/human-[VH-CH1,VL-CL]-human-IgG4-[hinge]-human-IgG3*-
58 [CH2-CH3]
- 59 human-IgG4/human-[VH-CH1,VL-CL]-human-IgG4-[hinge]-human-IgG4[N-
60 terminal region of CH2]-human-IgG3*[C-terminal region of CH2 : > aa position
61 251]-human-IgG3*[CH3]
- 62 mouse-IgG2b/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-[CH2-
63 CH3]
- 64 mouse-IgG2b/human-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-
65 [CH2-CH3]
- 66 mouse-IgG2b/mouse-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG3*-
67 [CH2-CH3]
- 68 mouse-[VH-CH1,VL-CL]-human-IgG4/rat-[VH-CH1,VL-CL]-human-IgG4-
69 [hinge]-human-IgG4-[CH2]-human-IgG3*-[CH3]
- 70 human-IgG1/rat-[VH-CH1,VL-CL]-human-IgG1-[hinge]-human-IgG4-[CH2]-
71 human-IgG3*-[CH3]